

## Part 402 — Nutrient Management

### NM402.01 Policy.

a) The guidance and procedures contained in this section are applicable to all technical assistance that involves nutrient management and/or the utilization of organic by-products, including animal manure, where nutrients are applied to the land. All NRCS employees will follow these procedures when providing such technical assistance. Third party vendors and other non-NRCS employees will use these procedures when assisting with the implementation of Federal conservation programs for which NRCS has national technical responsibility and that include nutrient management (590) in the conservation plan.

b) Nutrient management (590) is developed in compliance with all applicable federal, state, and/or local regulations. Federal, state, and/or local regulations take precedence over NRCS policy when more restrictive.

c) New Mexico NRCS has supplemented national guidance to make it applicable to local conditions as appropriate.

### NM402.02 Definitions.

a) Nutrient Management (590): A practice with documented record of how nutrients will be used for plant production prepared for reference and use by the producer or landowner.

b) Organic By-product: Any organic material applied to land as a source of plant nutrients (e.g. manure, food processing waste).

### NM402.03 Certification.

a) All persons who review or approve nutrient management (590) will be certified through a certification program accepted by NRCS New Mexico.

b) NRCS employees and conservation district staff will be certified for nutrient management (590) through the NRCS job approval cited in CM 180, Part 409.

c) Individuals from third party vendors or approved sources (e.g. Certified Crop Advisors) will be certified by the third party vendor or source as meeting minimum requirements. NRCS New Mexico will provide to third party vendors and approved sources, as requested, minimum criteria comparable to those required for NRCS certification.

### NM402.04 Conservation Plan and Nutrient Management (590)

a) Nutrient management (590) is part of the Resource Management System (RMS) and a more comprehensive conservation plan. The Nutrient Management (590) shall recognize other requirements of the conservation plan and be compatible with its other requirements.

b) Nutrient management (590) is developed in accordance with technical requirements of the NRCS Field Office Technical Guide (FOTG) policy requirements of the General Manual (GM), procedures contained in the National Planning Procedures Handbook (NPPH), and technical guidance contained in the National Agronomy Manual (NAM).

c) A conservation plan with Nutrient Management (590) will include the following elements for nutrient management, as applicable:

1) Aerial site photographs or maps and a soil map (case file).

2) Current and/or planned plant production sequence or crop rotation (590 Nutrient Management Job Sheets).

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- 3) Results of soil, plant, water, manure or other organic by-product sample analyses (590 Nutrient Management Job Sheets).
  - 4) Realistic yield goals for the crops in the rotation (590 Nutrient Management Job Sheets).
  - 5) Quantification of all nutrient sources (590 Nutrient Management Job Sheets).
  - 6) Recommended nutrient rates, timing, form, and method of application and incorporation (590 Nutrient Management Job Sheets).
  - 7) Location of designated sensitive areas or resources and the associated nutrient management restriction (NM Resource Inventory Worksheet and, if CNMP, NM CNMP Resource Inventory Sheet).
  - 8) Guidance for implementation, operation, maintenance, record keeping, (590 Nutrient Management Job Sheets) and
  - 9) Complete nutrient budget for nitrogen, phosphorus, and potassium for the rotation or crop sequence (590 Nutrient Management Job Sheets).
- (d) When applicable, conservation plans with nutrient management (590) should include other practices or management activities as determined by specific regulation, program requirements, or producer goals.
- (e) New Mexico NRCS has developed an electronic spreadsheet for the format and appearance of nutrient management (590) practice (please note 590 Nutrient Management Job Sheets). This is in accordance with the National Planning Procedures Handbook (NPPH) and other State developed guidance. Every conservation plan with nutrient management will have this spreadsheet or its equivalent.
- (f) If the Conservation Management Unit lies within a hydrologic unit area that has been identified or designated as having impaired water quality associated with nitrogen or phosphorus, nutrient management will include an assessment of the potential for nitrogen or phosphorus transport from the field. The Phosphorus Index (P1) and/or Leaching Index (LI) may be used to make these assessments.
- 1) When such assessments are made, nutrient management (590) will include:
    - i. A record of the site rating for each field.
    - ii. Information about conservation practices and management actions that can reduce the potential for phosphorus movement from the field.
- (g) Review and Revision of Nutrient Management (590)
- 1) Nutrient management (590) should be reviewed periodically to determine if adjustments or modifications are needed. As a minimum, the nutrient management (590) will be reviewed and revised with each soil test cycle. When possible, annual reviews should be made to determine if changes in the nutrient budget are needed for the next planned crop. If livestock numbers or land area increases or decreases by 20%, or the crop rotation changes, a review of the nutrient budget is needed.
  - 2) The 590 Nutrient Management Job Sheets (record keeping) or its equivalent will be used to enable the producer or the representative of the producer to provide input for a periodic review.

**Part 402 — Nutrient Management****NM402.05 Soil, Plant Tissue, and Manure Testing**

(a) Current soil test information is used in the development of all budgets for nutrient management. Soil testing shall include analysis for any nutrients for which specific information is needed to develop the nutrient component of the conservation plan. Request analyses for: pH, electrical conductivity, soil organic matter, nitrate nitrogen, phosphorus, potassium, magnesium, calcium, and sodium. Tests for other elements may be required when needed to develop components for nutrient management or to comply with state or local requirements. Current soil tests are those no older than 5 years, or are less than 5 years old if required by the state. Annually cropped fields will have a soil test taken the first year of a new plan or rotation, thereafter once in five years as a minimum. Hayland, rangeland and pasture can be tested once in five years. If organic sources of fertilizers are used two or more consecutive years, annual soil testing is required.

(b) Soil Sampling

1) Soil samples shall be collected and prepared according to the NMSU guidance or Extension Service recommendations.

(c) Soil test analyses shall be performed by laboratories that are accepted in one or more of the following programs: the North American Proficiency Testing Program (Soil Science Society of America), or laboratories whose tests are accepted by NMSU.

(d) Tissue sampling and testing, if used, shall be done in accordance with NMSU standards for recommendations.

(e) Nutrient values of manure and organic byproducts (excluding sewage sludge) shall be determined prior to land application based on laboratory analysis, acceptable “book values” recognized by the NRCS and/or NMSU, or historic records for the operation (two or three years of no operational change), if they accurately estimate the nutrient content of the material. Acceptable book values for New Mexico will be found in the New Mexico Nutrient Management Specification. Heavy metals in biosolids have additional criteria.

**NM402.06 Nutrient Application Rates.**

(a) Soil amendments can be applied, as needed and where economical, to adjust soil pH to the specific range of the crop for optimum availability and utilization of nutrients. Most conditions in NM will not require a pH change. New Mexico soils range from pH 6 to 8.5. Many soils have large amounts of free lime which prevent pH adjustment with amendments such as sulfur.

(b) Recommended nutrient application rates shall be based on NMSU recommendations and/or industry practice when recognized by the NMSU that consider current soil test results, realistic yield goals and management capabilities.

(c) The planned rates of nutrient application, as documented in the nutrient budget, shall be determined based on the following guidance:

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### NM402.06 (c)(i)

1) Nitrogen Application — Planned nitrogen (N) application rates shall match the recommended rates except when manure or other organic by-products are a source of nutrients. When manure or other organic byproducts are applied, and the Phosphorus Index is High, Very High, or Excessive, the manure shall be applied at rates consistent with the phosphorus standard. In such situations, an additional nitrogen application, from non-organic sources, may be required to supply the recommended amounts of nitrogen. Manure or other organic by-products may be applied on legumes at rates equal to the estimated removal of nitrogen in harvested plant biomass.

(2) Phosphorus Application — Planned phosphorus (P) application rates shall match the recommended rates except when manure or other organic by-products are a source of nutrients. When manure or other organic by-products are a source of nutrients, the planned rates of phosphorus application shall be consistent with the Phosphorus Index (P1) rating. A single application of phosphorus applied as manure may be made at a rate equal to the recommended phosphorus application or estimated phosphorus removal in harvested plant biomass for the crop rotation or multiple years in the crop sequence. This can only be done when the P1 is Very Low, Low or Medium.

(3) When such applications are made the application rate shall:

- i. not exceed the recommended nitrogen application rate during the year of application, or
- ii. not exceed the estimated nitrogen removal in harvested plant biomass during the year of application when there is no recommended nitrogen application, or
- iii. not be made on sites considered vulnerable to off-site phosphorus transport unless appropriate conservation practices, and management activities are used to reduce the vulnerability. Leaching and runoff practices must be included in the resource management plan.

(4) Potassium Application — Excess potassium shall not be applied in situations in which it causes unacceptable nutrient imbalances in crops or forages. When forage quality is an issue associated with excess potassium application, state standards shall be used to set forage quality guidelines.

(5) Other Plant Nutrients — The planned rates of application of other nutrients shall be consistent with NMSU guidance or industry practiced if recognized by NMSU.

(6) Starter Fertilizers — Starter fertilizers containing nitrogen, phosphorus and potassium and/or micronutrients may be applied in accordance with NMSU recommendations or industry practice if recognized by NMSU. When starter fertilizers are used, they shall be included in the nutrient budget.

d. The application rate (in/hr) for material applied through irrigation shall not exceed the soil intake/infiltration rate. The total application of water shall not exceed the field capacity of the soil. See the Irrigation Guide in the NM Field Office Technical Guide (FOTG) for local soil water holding capacities and soil intake rates.

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NM402.08 (b)

### NM402.07 Special Considerations.

a. When animal manures or other organic by-products are applied, a field-specific assessment of the potential for phosphorus transport from the field shall be completed. This assessment will be done using the NM Phosphorus Index (P1). In such cases, nutrient management components will include:

- (1) A record of the P1 rating for each field or sub-field, and
- (2) Information about conservation practices and management activities
- (3) That can reduce the potential for phosphorus movement from the site. Practices will be listed in the Comment section on the worksheet.

- (4) When such assessments are done, the results of the assessment and recommendations shall be discussed with the producer as the practice is planned.

- (5) Recognize that some manures contain heavy metals and should be accounted for in the plan for nutrient management.

b. Land application of sewage sludge.

- (1) When sewage sludge is applied, the accumulation of potential pollutants (including arsenic, cadmium, copper, lead, mercury, selenium, and zinc) in the soil shall be monitored in accordance with the US Code, Reference 40 CFR, Parts 403 and 503, and/or any applicable state and local laws or regulations. Sewage sludge is analyzed prior to land application to determine its nutrient value, heavy metals, and salt content.

### NM402.08 Record Keeping.

a. It is the responsibility of producers, or agents of producers, to maintain records, which document the implementation of nutrient management components of the conservation plan. Records include:

- (1) Soil test results and recommendations for nutrient application,
- (2) Quantities, analyses and sources of nutrients applied,
- (3) Dates and method of nutrient applications,
- (4) Crops planted, planting and harvest dates, yields, and crop residues removed.
- (5) Results of water, plant, and organic by-product analyses,
- (6) Dates of review and person performing the review, and recommendations that resulted from the review.

b. Records should be maintained for five years; or for a period longer than five years if required by other Federal, state, or local ordinances, or program or contract requirements. The 590 Nutrient Management Job Sheets or its equivalent will be used for maintaining records. For any organic nutrient application, record-keeping requirements will be fulfilled with the Records, Report, and Organic sheets of the 590 Nutrient Management Job Sheets. For any other nutrient application, record keeping requirements will be fulfilled with the Records and Report sheets of the 590 Nutrient Management Job Sheets.